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Practitioners and Public Health Work.

A great deal has been written of late years upon subjects connected with Public Health—the general question of purity of meat and milk, and the more special one of tuberculosis being, of course, the chief points. Indeed, these subjects receive so much attention from writers and essayists that their constant recurrence may be beginning to pall upon some members of the profession. It may be thought, also, that a practising clinician who is never likely to be systematically engaged in any branch of public health work, need not concern himself greatly with its numerous details. The fact that a good paper on the subject is always welcomed by any veterinary society shows that these ideas are not general, and testifies to the good sense of the profession.

There are two reasons why every practitioner should keep himself abreast of the latest developments in veterinary sanitary science. In the first place, the enlightenment of the public, especially the stockowning section of it, regarding the relation of animals to public health, is still far from complete. Much good work in this direction is being done by various bodies, but there is nevertheless room for a great deal of private effort in the diffusion of knowledge amongst owners. No man has so many opportunities of doing this as the practising veterinarian in his daily intercourse with his clients, and the more remote and isolated his district may be, the more useful his services are likely to prove.

Beyond this duty of preparing the public for future legislation, we must remember that practitioners will be required to act as auxiliaries in the administration of that legislation. Sooner or later—perhaps very soon—each district will be placed under the control of an official, non-practising, veterinarian, who will expect the co-operation of local practitioners.

This co-operation ought to extend beyond the mere notification of any scheduled disease, which will probably then be compulsory upon all veterinary surgeons. Every clinician should be able to form an appreciative forecast of the requirements of the veterinary officer of health, and to advise his clients in accordance with them. If he fails to do so, his own reputation will suffer, and there is no reason why he should fail. It is not necessary for the practitioner to become an adept at such specialities as practical bacteriology. It is, however, essential that he should possess a good general knowledge of modern preventive medicine in its bearing upon the domestic animals, and he can now easily obtain this. By following the numerous papers and discussions upon the subject, he can keep pace with its advance, to the benefit of his own position and to the public welfare.

SOME NOTES ON CASES OF DISEASE OF THE PYRAMIDAL PROCESS.

By Wm. Willis, M.R.C.V.S.

As illustrative of the wide diversity in character, and more particularly in degree of lameness—most frequently the only symptom—arising from similar joint lesions in relation to this trouble—I am sending you some particulars of two cases.

A reference to the illustrations will show that both pedal joints (hind feet) were diseased in either case, yet lameness only resulted in one foot, the near one in each case. It would appear that the off hind foot in the case I am describing as No. 1 was even worse affected than the corresponding foot in No. 2, and yet there was never the slightest lameness in this limb, nor any evidence of disease in the foot during life. Case No. 2 did develop a modified form of stringhalt in her off hind, but not till disease had been in existence some considerable time.

Case I.

The Case No. 1 occurred in an aged grey mare and came under observation in the winter 1902-3. The case was reported to me as having "pulled out" very lame on the previous afternoon after working in the morning. The farrier in the yard—an observant man—had suspected "nail trouble," as the mare had just recently been shod. He found the foot tender whilst the hammer was being used in removing and replacing the shoe, but he satisfied himself that the nailing was not at fault.

When I saw her she ran straight forward quite soundly, but was distinctly lame on the near hind limb whilst being "pulled up" or turned.

There was distinct distention of the patellar bursa, the capsule of the hock joint and the sesamoid bursa. I could not detect anything further amiss with the limb. The capsule of the hock was most decidedly tense—a well-marked bog-spavin—so I had a blister applied to this part. She moved soundly very soon afterwards, and was exercised and returned to work in about a month.

Within a week there was another attack of excessive lameness in this near hind limb, passing off in the course of a few hours. She was rested for a few days, and then put back to work and after this experience had been repeated two or three times I detected some slight hard swelling at the coronet—in the middle line of the foot. This would be five or six months after she had shown lameness first. She now had a two months rest. On resuming work, for some few days she continued sound, then she developed a slight lameness at starting, which only lasted whilst she traversed the first ten or twelve yards and then passed off. About

this time it was also noticed that on rising after resting she moved across her stall with a marked limp. She seemed to have considerable pain for a little while after getting up, but yet every suggestion of pain passed off after she had moved a few yards. This condition of affairs persisted till the summer of 1905 when lameness became marked and persistent. In the interval she had developed a great deal of thickening over the coronet at the toe. I now divided the posterior tibial nerve, and she was restored to soundness, and continued so till I had her destroyed early in this year. She was worn out.

During her last year she developed a well marked stringhalt—probably a sequel of division of the posterior tibial nerve. It is also seen in connection with this pyramidal trouble unassociated with neurectomy.

The illustration shows well the bony mass on the extremity of the extensor pedis tendon, and the calcareous change in the superior broad ligament of the navicular bone. These changes are usual in old-standing cases of this malady. It also shows the seriously damaged condition of the pedal joint in the opposite limb, on which she had never shown any lameness.

Case II.

Case No. 2 was that of an aged bay mare, seen by me in the summer of 1904. She was then very lame on her near hind foot, fairly obviously a foot case. She was found lame by her keeper on bringing her out of the stable to dress her. She worked late on the previous day, but was said to have reached home going sound. She touched the ground very lightly with this foot, and carried the limb after the first two or three steps. The removal of the shoe gave her much pain. There was nothing discovered amiss with the bottom of the foot, except extreme tenderness when tapped lightly with the hammer. Pressure over the insertion of the extensor pedis tendon gave her pain from the first day of her lameness. No treatment was adopted except the foot bath, used with the idea of keeping the horn soft, and so the more readily accommodating any swelling that might arise.

Within a month of her falling lame she had a readily discernible enlargement on the coronet at the toe, which was much narrowed towards the top of the hoof. For three weeks or so lameness was severe, then it passed away gradually. About the seventh week she was sent to exercise, and by the end of ten weeks she was deemed fit for work again.

She was put back to work, and so far as her hind limbs were concerned she gave me no further trouble. She developed a modified stringhalt in which the flexion of the phalanges was much more marked than that of the hock and stifle, as seen in stringhalt usually. This was shown only at starting. I had her destroyed three years later on account of laceration of the perforans tendon in an unnerved front foot.

In the interval it became obvious, by reason of alteration in the contour of the opposite hind foot that it also was the seat of this pyramidal trouble. During all this period she moved quite true, in fact perfectly soundly, except for the modified stringhalt referred to.

It seems strange that one should get such varied symptoms resulting from this trouble, and that this condition may exist without giving any sign of its existence.

One would hardly expect a horse whose pedal bones were so damaged, as is shown in the illustration to this second case to move sound, and yet this mare had never been lame on her off hind foot at any time, and had done hard, heavy, fast work for the last three years of her life.

TRAUMATIC METRITIS.

I think the following was no doubt a case of vaginitis and metritis, and the history and symptoms point to the condition being caused through some injury to the vulva.

At 3 p.m. on Nov. 22nd, an aged brown mare was brought to the sick lines suffering from colic. Her temperature was 102, respiration 15, and pulse 50. The vulva and the tissues surrounding it on both sides were slightly swollen, and the mucous membrane of the vulva was very congested. History revealed that she was off her feed, and that two days before a few drops of blood had been seen behind her on the stable floor. As the colicy pains were not very acute an ounce of turpentine in a pint of linseed oil was given and rectal enemas were also injected.

The mare got worse during the afternoon and the vulva and the surrounding tissues swelled enormously. There were frequent attempts to urinate and a few ounces were passed at each attempt.

At 8 p.m. her temperature was 105, respirations 24, and pulse 70.

At 9 a.m. on 23rd her temperature was 104·8, respirations 32, and pulse, which was so weak that it had to be taken with the phonendoscope, was 100. She was very weak and still made frequent attempts to urinate. On examination per rectum the uterus could be felt much enlarged and tender, and distinguishable from the intestines by not "pitting" on pressure. Vaginal douches of warm water containing 1 grain per ounce of chinosol were given, and hot fomentations were applied to the abdomen. The latter seemed to give great relief, Milk was given as a drench.

On Nov. 24th the temperature had fallen to 102, respirations 14, and pulse 70. She seemed in less pain and was much brighter, and the swelling round the vulva had decreased greatly in size. The treatment was continued-

On Nov. 25th the mare seemed much better and would drink the milk of her own accord. Her temperature was 101, pulse 70, and respirations 12. The swellings had quite disappeared, and on examination per rectum the uterus was felt to be much smaller. The mare continued to improve and has now quite recovered.

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THE SWINEY LECTURES.

HORSES OF THE PAST AND PRESENT.

II.

Readers of the digest of Dr. Cossar Ewart's first lecture, in last week's issue, will remember Hoernes calls the last Age into which he sub-divides the Palaeolithic Period, the Magdalenian. During this Age horses continued to frequent the South of France in large numbers; but the rhinoceros disappeared and the mammoth, though fairly abundant in the East, became scarce in the West of Europe. The stag was scarce, and the bison all but vanished. As the forests dwindled and the steppe extended reindeer took possession of the South of France; and became as characteristic of this Age as the horse was of the Salutrian.

The Magdalenians were a higher type than the short Salutrians, and very different from the tall, long-skulled Mousterian. They ranged over the greater part of Europe. Their weapons, as a rule, were made from the horn and bone of reindeers: their flint implements unimportant. They made necklaces, bracelets and anklets out of shells, teeth, and the vertebræ of fish: found in their graves. Like Salutrians they were highly artistic. The Font-de-Gaume cave they decorated with seventy-seven painted figures of animals, some in ochre others in black; amongst which are two horses. Neither these frescoes nor others of this Age indicate that horses or reindeer were domesticated.

From carvings and engravings from the Grotto of Mas d'Azil, on the left bank of the Arise, a small tributary of the Garonne, Piette thinks the horses are haltered. Still more remarkable is the head from St. Michell d'Arudy; also on the northern slopes of the Pyrenees, but nearer the Atlantic. According to Piette the halter in this figure consists of (1) a nose-band, (2) decorated side pieces, (3) strong cords extending upwards from them, (4) similar cords round the base of the ears, and (5) various fine cords, which he thinks kept off flies. The side pieces, made of wood, bone, or reindeer horn, probably kept the nose-band in position and gave attachment for leading ropes. After considerable study Piette concluded that, with the help of the halter, the Magdalenians formed semi-domesticated herds of horses, which gave them a reserve of food, and so more leisure to improve their bone and horn implements.

Notwithstanding the figures of Messrs. Capitan and Breuil, and those of Piette, it is not generally admitted that the horse was domesticated during the later Palaeolithic Period.

It is possible these Reindeer Hunters now and again formed horse drives, like the zebra drives in East Africa in recent years, and in like manner were penned in natural or artificial enclosures; and haltered and used to carry home the spoils of the chase from far away hunting haunts. But it is most unlikely that horses were reared, even in the simple way now followed on Mexican Haciendas or by the wandering mare-milkers of Mongolia: and still less so, that the horses, now domesticated, are descendants of those bred by the Magdalenians.

Doubtless the Cro-Magnon race, who made weapons and tools of reindeer horn, and life-like carvings and coloured drawings of the animals they hunted, were intelligent enough to breed horses. But what use could a domestic horse be to men whose only work was to hunt?

Even if horses were tamed, and now and again reared, by the Magdalenians, it would not be accurate to say they were domesticated by them whilst they lived in the Vezere and other valleys in the South of France during the last part of the Palaeolithic Period.

The Neolithic Period.

The time between the Salutrian and the Magdalenian Ages was comparatively short; but that between the Palaeolithic and Neolithic Periods so long that it is called the Mesolithic Period.

The culture of the Neoliths, who reached Central Europe about the beginning of the Fourth Interglacial Epoch, entirely differed from that of the Magdalenians. It is not known where the first experiments were made in growing cereals and fruit, in weaving and spinning, the making of pottery and forming of herds of domestic animals; but it was doubtless where the cold of the Fourth Glacial Epoch was barely felt—an area into which the reindeer never penetrated.

It is extremely probable that when the Neoliths reached the great central lakes of Europe, where they built pile-dwellings, they had only sheep and goats with a dog as herd; so highly improbable they had horses. Many, amongst whom Professor Ridgeway, believe that the horse was not domesticated till the Bronze Age. The first Swiss lake-dwellers had horses; but whether they were domesticated is doubtful. Unfortunately the Neoliths have left no engravings, no drawings, no carvings to help us.

Dr. Cossar Ewart agrees with Rutimeyer that the horse was living in a state of domestication during the Neolithic Period, but is unable to find any evidence to support Pietremont, that domestic horses are first introduced by the Neoliths; and, while admitting with Mons. Dupont that the species which occupied the South of France with the reindeer in all probability migrated in an easterly direction at the end of the Magdalenian Age, he believes the place of this species was taken by other species adapted, like the stag and roe-deer, for a forest life. He believes the horse was domesticated before the Bronze Age, because he agrees with Piette in assuming they were used long before bits and chariots were invented, but how long has yet to be settled.

From this view of the Stone Age it appears: (1) that during the Palaeolithic portion the horse, with rare possible exceptions, was only used for food; (2) that for some time after the arrival of the Neoliths the horse continued to be hunted in the Pyrenees, the North of Switzerland, and other districts where isolated colonies of reindeer hunters lingered; and (3) that though there is no *certain* evidence that the horse was domesticated until the Bronze Age, the probability is that it was so in Central Europe during the later portion of the Neolithic Period.

"SOME SUGGESTIONS ON THE CONTROL OF SWINE FEVER."*

By J. S. Lloyd, F.R.C.V.S., D.V.S.M. Vict., Chief Veterinary Inspector, Sheffield.

Notwithstanding the statements of the Chief Veterinary Officer [1] of the Board of Agriculture and Fisheries, that, "Although the increase of swine fever is unfortunate and disappointing, it is not particularly alarming," and of the Assistant Secretary [2] of the Animals Division of the Board, that although "there is an increase of 463 outbreaks of swine fever in 1906 as compared with 1905, the results of the operations (to control the disease) conducted during last year are not, it is submitted, entirely satisfactory," there are, I feel sure, few people connected with the industry of pig breeding, or the trade of pork butchers, or interested in the suppression of animal diseases who will agree that the matter of controlling swine fever in pigs is anything but very unsatisfactory.

The following table shows at a glance :—

Present Condition of Swine Fever.

Year.	Counties in which the disease existed.	Outbreaks confirmed.	Slaughtered as diseased or exposed to infection
1901	71	3140	15,237
1902	67	1688	8,263
1903	63	1478	7,933
1904	64	1196	5,603
1905	58	817	3,876
1906	64	1280	7,359
1907(45 weeks)	64	2139	10,247

Or if we take the returns for forty-five weeks of 1907, and compare them with those of the years 1904 to 1906, the following summary shows the position up to date:

Summary of Swine Fever Returns.

Period.		Outbreaks.	Slaughtered as diseased or exposed to infection.
Total for 45 weeks, 1907		2139	10,247
Corresponding period in	1906	1027	5,858
	1905	706	3,169
	1904	1099	5,120

Before it is possible to make any suggestions on the control of swine fever it is necessary to carefully consider and analyse the conditions and measures which accelerate or retard the increase of the disease. That swine fever is a peculiar and subtle disease all will admit; even its causal organism is still a matter of some doubt. The disease is usually defined as a contagious eruptive fever caused by a microbe, and affecting swine. The results of certain investigations in America were published by the Bureau of Animal Industry, U.S.A., in March, 1905, the chief points of which are thus summarised by Stockman [3] :—

(1) That the blood of pigs suffering from the highly contagious form of hog cholera abundantly contains the infective agent.

(2) That this agent is not the *Bacillus cholerœ suis* as was formerly considered to be the case.

(3) That the infective agent belongs to the class of ultra-microscopic organisms, and passes through the pores of the finest porcelain filters used in the laboratory.

(4) That pigs which recover from the disease produced by injecting the filtered blood of others suffering from hog cholera are immune against further attack.

Stockman confirms the statement that the blood of pigs suffering from swine fever has been found to be virulent after filtration through a Chamberland filter, and states that this method may be turned to account as a means of diagnosiug puzzling outbreaks of the disease in which a number of animals die without showing typical lesions. Later [4] he stated that "the blood of infected pigs when injected into healthy swine, even after filtration through the finest filters, could produce the disease in the inoculated animals," and that "the inoculation method has been used more frequently to establish diagnosis where repeated visits and autopsies failed to discover so-called typical lesions on premises upon which deaths continued to take place at intervals."

Conditions which Accelerate the Increase of Swine Fever.

The following may be mentioned as reasons why swine fever outbreaks increase :—

(1) *Failure to Notify (promptly, or possibly not at all) the Existence, or Suspected Existence, of the disease when Outbreaks occur.*—Formerly, no doubt, this was the case, in many instances being due to ignorance of the disease on the part of owners of swine. In other cases the existence of disease was wilfully concealed by owners of pigs, and particularly pig-dealers, on account of interference with pig movements, which necessarily followed notification, by reason of the suspected premises being declared swine fever infected places. There is probably now less reason to think that failure to notify is so common, or, at any rate, so far as wilful concealment goes. In 1903 [5] 9,458 reports of suspected swine fever were made to the Board of Agriculture, but in only 1478 cases was the existence of disease confirmed. In 1904 the corresponding figures were 9147 and 1196, and in 1906, 8837 and 1280 respectively. It will thus be seen that the number of cases confirmed as swine fever was much smaller than the number of cases reported, being only about 15, 13, and 14 per cent. respectively.

(2) *Contact of Healthy pigs with Diseased swine, or their Excreta, or their Morbid parts.*—Owing to the fact that in occult cases of swine fever apparently healthy pigs may be affected with swine fever for several weeks, if not for some months, it can easily be seen how, through the sale and movement of such pigs, the points of infection can be rapidly multiplied. Except in very acute cases the period of incubation is generally over a week, and unless detention regulations are in force, pigs may be exposed in several markets, and split up into several lots during that time. The placing of healthy pigs in sties, lairs, market pens, pig-dealers' carts, railway trucks, etc., in which diseased pigs have been, is almost certain to convey infection, when the former case of disease was unnoticed, or where proper and adequate disinfection had not been carried out. The placing of healthy pigs with diseased ones is practically certain to be followed by an outbreak in the former. It is stated that cases have been known where a series of outbreaks have followed the visits of a castrator or spayer. The carrying of excreta from diseased pigs to healthy swine may be by means of the boots of attendants or others visiting infected places, and it is thought that the infection may be conveyed by such animals as rats, or by poultry.

(3) *Difficulty of Diagnosis.*—In young pigs the disease often takes a very acute form, death coming on rapidly without any very definite symptoms or post-mortem appearances. In the majority of cases, however, the pigs appear to be dull, lie under cover, squeal if moved,

* Paper read at a meeting of the Lancashire Veterinary Medical Society, at Manchester, on December 5, 1907.

and stagger about. There is often great thirst, but generally loss of appetite, with at first constipation, later diarrhœa, with a fœtid or blood-stained discharge. A red rash may appear on the skin of the abdomen, inside the thighs or forearms, and on the ears. In the latter case the "tip" half of the ear is more generally affected, and the red colour has a tendency to become blue. The temperature is high, 105° F., or higher, the breathing is rapid, and a cough may be present; the animal rapidly wastes. In very chronic cases there may be few, if any, of the above symptoms present, and nothing apparent indicative of ill-health, except that the animal has a stunted or unthrifty appearance.

On post-mortem examination there may be some of the external signs enumerated above to be seen; internally there are usually found typical swine fever ulcers, sometimes in the stomach, more generally in the large intestines, especially in the cæcum and near the ileo-cæcal valve. In the case of very young pigs dying from the acute form of the disease, there are often no very definite lesions found on post-mortem examination; in many cases small hæmorrhages may be found on the mucous membrane of larynx or trachea, or of the stomach or intestines, and in some instances in the peritoneal covering of the kidneys. Generally speaking, however, when the disease is thus present in young pigs there is one or more cases amongst older animals on the premises with which they have been in contact.

Stockman [6] deals very fully with post-mortem diagnosis in examining the following possibility:—"That the common methods of post-mortem diagnosis are faulty, and result in some premises upon which deaths have occurred being freed, although swine fever really exists thereon," and makes the following summing up:—

(1) One must not always expect to find ulceration or diphtheritic exudate in the intestines of pigs dead of swine fever, or in unthrifty-looking pigs killed on suspicion.

(2) In indefinite cases lesions of enteritis should be looked upon with grave suspicion, especially when present in an apparently subacute form characterised by slight congestion of the mucous membrane with superficial abrasions and sometimes punctiform hæmorrhages.

(3) Enzootic pneumonia should also give rise to suspicion, especially when the lung lesions are accompanied by enterits or intestinal congestion.

(4) Since pigs often recover in a comparatively short time from swine fever, it is generally a mistake to leave unthrifty pigs on suspected premises in the hope that they will develop more typical lesions, and so establish the diagnosis.

(4) *Insanitary Piggeries.*—There can be no doubt but that the terribly insanitary condition of many infected piggeries must have great influence upon the persistence of infection on such premises. It must not be thought that an insanitary stye will cause an outbreak of swine fever, but once such a place, or number of places, as is often the case, become infected there is usually considerable trouble in getting rid of the infection. There is first of all the difficulty in getting such sties, often made of old bacon and sugar boxes, and such other unsuitable material, properly cleansed and disinfected. Probably in many cases nothing short of utter demolition followed by cremation would adequately meet the case. Experiments in America [7] show that the contagium of swine fever might be kept alive in clear river water for from two to four months—stagnant pools were still more dangerous—whilst it retained its power to infect if sown in moist soil for a period extending also from two to four months. When the insanitary conditions which surround many piggeries are therefore taken into consideration, can it be wondered at that in many cases recurrences of swine fever take place at intervals ranging from one to twelve months?

(5) *Defective Movement Regulations.*—There can be no doubt but that defective measures for controlling movements of swine, and the want of executive officers to successfully carry out swine movement regulations have in the past had much to do with the increase of swine fever outbreaks. Ever since the Board of Agriculture commenced to deal with swine fever in November, 1893, the officers of the Board have solicited the assistance of local authorities in carrying out regulations dealing with the movement of swine generally, and in infected districts particularly, and with more or less success. Naturally local authorities did not at first like enforcing restrictions which were considered objectionable by agriculturalists and pig-breeders, but they gradually saw that the only way to keep the disease within anything like reasonable bounds was by hearty co-operation with the efforts of the Board. In 1901 the County Council of Cheshire adopted stringent regulations for the movement of swine, with great success, and many other counties followed suit.

Measures adopted for the Control of Swine Fever Outbreaks.

Since 1894 various orders dealing with swine fever have been made by the Board of Agriculture and Fisheries, some of which have been repealed; those mentioned below are still in force:

(1) *Swine Fever Order of* 1894:—This Order came into force on July 24, 1894. Under Section 1 owners of pigs have to report cases of swine fever or suspected cases to the local police constable, who in turn notifies the inspector under the Diseases of Animals Acts. The inspector in turn has to notify the Board of Agriculture by telegram, and also report to the local authority. Under Section 2 he has to proceed to the suspected premises, and under Section 3 declare the premises an infected place (serve Form A); the rules for which are given in Section 4. Under Section 5 he has to grant licenses for the removal of dung, etc., from the premises and under Section 6 he may, if necessary, prohibit the movement of pigs from neighbouring premises. Under Section 7 he may have to superintend the destruction or burial of diseased carcases.

Cases notified to the Board by telegram are dealt with by the officers of the Board. First the Board send a veterinary inspector to the suspected premises, and for this purpose the Board have a staff of veterinary officers of about 100 in number, one-quarter of whom devote their whole time to the services of the Board, whilst the remainder are veterinary surgeons in practice who receive an annual retaining fee and special fees for services rendered when required. This arrangement may be best for the Board, but is not in favour with the majority of the veterinary profession.

Should the veterinary inspector visiting the suspected premises diagnose swine fever, he reports so to the Board, and forwards the post-mortem specimens upon which he bases his diagnosis to the chief veterinary officer of the Board for confirmation. The further procedure in connection with the outbreak, such as dealing with the remaining pigs on the premises, disinfecting the latter, etc., devolve upon one of the travelling lay inspectors of the Board.

(2) *Swine Fever Order of* 1901.—This Order came into operation on October 14, 1901, and deals with the cleansing and disinfection of (*a*) lairs, etc., used for swine; (*b*) pig dealers' premises, and (*c*) vehicles, crates, etc., used by dealers. It empowers local authorities to enforce the Order and to do the work in case of default at the expense of the defaulters.

(3) *Swine Fever (Infected Areas) Order of* 1902.—This Order came into operation on November 1, 1902, but only applies to any particular area to which it may be

applied by a special order of the Board. At the present time it is in force in fourteen counties. It more particularly deals with the movement of swine in areas in which swine fever is very prevalent, and invariably the application of this Order has considerable influence in reducing the number of outbreaks of swine fever in such areas.

(4) *Swine Fever (Movement from Ireland) Order of* 1904.—This Order came into operation on January 23, 1905, and primarily dealt with all movement of swine from Ireland (but has since been modified as to store pigs by the Swine Fever [Movement from Ireland] Order of 1906). It provides for the landing in Great Britain of Irish pigs for immediate slaughter. Pigs have to be licensed by an officer of the Department of Agricultural and Technical Instruction for Ireland, and have to be marked, etc. Pigs so licensed may be taken direct to a bacon factory or slaughterhouse, or to a lair, market or saleyard, specially authorised for that purpose by the local authority. Such swine can only be moved from the lair, market, or saleyard to a bacon factory or slaughterhouse, and on a movement licence granted by an inspector of the local authority. All swine moved either directly or indirectly under the Order to a bacon factory or slaughterhouse have to be killed there and must not be removed elsewhere.

(5) *Swine Fever (Movement from Ireland) Order of* 1906.—This Order came into operation on March 1, 1906, and allows the movement of store pigs from Ireland into Great Britain on a licence granted as in the 1904 Order, but only upon a declaration made and signed by the occupier of the premises from which the pigs are to be moved, and countersigned by a police officer of the district, and by a further declaration made and signed by the applicant for the licence. The first declaration declares that the pigs have been on the premises for twenty-eight days, that during such period they have not been exposed to the infection of swine fever, and that their movement is not prohibited by any notice from an officer of the central or local authority in Ireland. The second declaration declares that the swine to be moved are those mentioned in the first declaration, and that they have not been exposed in any market, fair, or saleyard, or been in contact with other swine. Swine moved into Great Britain under this order have to be kept separate from other swine, moved direct to the place mentioned in the licence, and there detained and isolated for a period of twenty-eight days.

(6) *Swine Fever (Regulations of Movement) Order of* 1903.—This Order was made by the Board on September 2, 1903, but it only applies to areas, counties or groups of counties scheduled by subsequent Orders of the Board. It was first applied to Glamorganshire, the Isle of Wight and Monmouthshire. It is now in operation in eighty-two administrative counties in Great Britain. It will thus be seen that it is a very important part of the operations against swine fever put in force by the Board, and demands more than a passing consideration. It consists of seventeen Articles, as follows :—

Article 1 deals with its application to "scheduled areas."

Article 2 restricts the movement of swine into the scheduled area.

Article 3 provides for the latter movement with a licence granted by an inspector of the local authority upon a declaration signed by the owner of the swine (or the agent), and countersigned by the police of the district from which the swine are to be moved. The declaration is to the following effect: That the declarer is the owner or agent, that the swine have been on the premises twenty-eight days, that they have not been exposed to the infection of swine fever, and that the movement is not prohibited by any notice of an officer of the Board or of the local authority. The declaration is kept by the inspector granting the licence, and the latter is in force for six days.

Article 4 deals with the pigs after arrival at destination. Swine moved to private premises have to be detained and isolated for twenty-eight days ; the carcase of a pig may, however, be removed. If the pigs are moved to a market, fair, saleyard, or exhibition, they can only be moved again with a licence granted by the local authority to a bacon factory or slaughterhouse, where they have to be killed, and a copy of the licence has to be sent to the local authority where the bacon factory or slaughterhouse is situate.

Article 5 deals with movement of swine into the scheduled are for immediate slaughter on a licence granted by an inspector of the district where the lair, market, sale yard, slaughterhouse, or bacon factory is situate. The following conditions have to be observed : The swine have to be marked, moved by railway as far as practicable, and kept separate from swine not marked. If moved to a lair, market or saleyard the swine can only be moved again to a bacon factory or slaughterhouse with a licence granted by an inspector of the local authority where the lair, market, or saleyard is situate. Swine moved under this Article either directly or indirectly to a bacon factory or slaughterhouse must be there detained until they are slaughtered. All lairs, markets or saleyards have to be specially authorised by the local authority, and a copy of the special authority sent to the Board.

Article 6 deals with the cleansing and disinfection of lairs, markets and saleyards.

Article 7 provides for the movement between two scheduled areas. Swine may be moved from a lair, market, saleyard, fair, or exhibition in one scheduled area to a bacon factory or slaughterhouse in another scheduled area with the licence granted at the lair, etc. (but it would appear that a copy of the licence has not to be sent to the receiving local authority as under Article 4).

Article 8 deals with the giving up of licences after completion of the movement.

Article 9 states the general provisions as to movement, viz., that the swine whilst being moved shall be kept separate from other swine, shall be moved by the nearest available route, and taken without unnecessary delay to the place of destination specified in the licence and not elsewhere, and that the Order does not authorise movement in a swine fever infected place or swine fever infected area, or where movement is prohibited by an officer of the Board or the local authority or by any other order of the Board.

Article 10 removes the application of any local regulation made by a local authority in a scheduled area, so far as the movement of swine under this Order into or within the district is concerned, but not otherwise.

Article 11 provides for the movement of swine through a scheduled area by railway.

Article 12 provides for the movement of Irish swine through a scheduled area.

Article 13 deals with the production of licences to police, etc., if demanded.

Article 14 states that the Order shall be enforced by the local authority.

Article 15 deals with offences under the Order.

Article 16 gives the usual interpretation.

Article 17 gives the title of the Order.

From the foregoing it will be seen that the operations of the Board of Agriculture against swine fever are mainly carried on under three Orders ; The Swine Fever Order of 1904, the Swine Fever (Infected Areas) Order of 1902, and the Swine Fever (Regulation of Movement) Order of 1903.

Success or Failure of Swine Fever Orders.

It may, generally speaking, be granted "that when once the provisions of the Swine Fever Order of 1894

have been put into force, the risk of the escape of infection from the premises on which disease has been detected is relatively small" [8]. That is the experience of the Assistant Secretary of the Board, and the writer's experience is in total agreement with it. The Swine Fever (Infected Areas) Order of 1902 is stated to be equally valuable in dealing with districts in which numerous cases of swine fever have simultaneously occurred. "Swine fever reappeared in Cumberland in 1905. No fewer than thirty-seven outbreaks occurred within a comparatively limited area, but by means of the application of the Swine Fever (Infected Areas) Order of 1902, and of the energetic action of the officers, both of the Board and of the local authority, the disease in that county appears to have been again stamped out" [9]. In other parts of the country it appears to have been equally successful.

Before dealing with the success or failure of the Swine Fever (Regulation of Movement) Order of 1903, it will be well, perhaps, to lightly trace its history.

In the report of the Assistant Secretary, Animals Division of the Board of Agriculture, 1901, it is stated that "the increase of disease was mainly due to strenuous resistance offered by local authorities and stock-owners throughout the country, to the general restrictions which had brought about a considerable decrease of the disease towards the fall of the preceding year, etc."

In a similar report for 1902 it is stated: "All experience goes to show that in operations against contagious diseases in animals the best results are obtained by means of the restriction and regulation of the movement of animals likely to have been exposed to the infection of the disease; and in swine fever it has been found that a very large measure of safety is secured where the movement of swine from district to district is confined to those which have been in the same ownership for twenty-eight days before movement, it being a condition of such movement that on arrival at their destination the swine are detained, and as far as possible kept isolated from other swine, for a further period of twenty-eight days."

It also states that local authorities have power to adopt such regulations, and instances the benefits derived therefrom by the counties of Cheshire and Somerset, in view of which facts the Board determined to recommend generally to local authorities action on similar lines, and by the close of the year (1902) the large majority of local authorities in England, Wales and the South of Scotland had decided to adopt regulations framed on those lines (same as in Cheshire, etc.) [10].

In the report for 1903 appears the following: "The report of last year sets out the steps taken to press upon local authorities the desirability of adopting regulations designed to protect their districts from the spread of swine fever if introduced by means of pigs brought from other districts.

"In the meantime local authorities have proved more and more ready to acquiesce in the policy of protecting their districts from the spread of disease by means of regulations requiring the detention under observation of pigs moved into their districts. It is to their action in this direction that a proportion of the credit of the diminished number of outbreaks of disease must be given."

It was also stated that the regulations were excellent, but in some districts the machinery for carrying them out was found to be defective, and went on to state: "The Swine Fever (Regulation of Movement) Order of 1903, like local regulations of the character above described, is designed to regulate the movement of swine into a district in such a manner as to reduce to a minimum the risk of the spread of swine fever by the introduction into such district of swine from without, and has been framed so as to be applicable to the districts of more than one local authority in a manner which will admit of the free movement of swine from place to place within the whole area scheduled."

In the report for 1904 appeared the following: "It may be asserted with some confidence that the present satisfactory position is in a very great measure due to the action taken by the local authorities generally upon the lines suggested in this circular letter, and there can be but little doubt that if the present policy is steadily maintained a further improvement in the position may reasonably be looked for. At the same time, it is hoped that the plan of grouping districts of local authorities together and placing the areas thus scheduled under the provisions of the Swine Fever (Regulation of Movement) Order of 1903 may be gradually developed in such a manner as to mitigate the severity of the general restrictions in localities in which this can with reasonable safety be accomplished."

In the report for 1905 the following paragraphs appeared: "A careful review of the present position as regards this disease has led the Board to the opinion that the time has now arrived when it is desirable that the policy of grouping together the districts of local authorities for the purposes of restrictions relating to the movement of swine, outlined in paragraphs 20 to 22 of their circular letter (A 114/C) to local authorities of January, 1904, and alluded to on p. 16 of the report for 1904, should be further developed.

"The effect of the application of the Swine Fever (Regulation of Movement) Order of 1903 to a county or group of counties, and to the boroughs comprised therein, coupled with the suspension of existing local regulations, is to permit of the free movement of swine throughout the entire area, whilst prescribing in the case of the movement of swine into any part of the area the adoption of certain precautionary measures designed to prevent the spread of swine fever. Uniformity within the combined district is thus, so far as possible, ensured, and, as regards the danger of the reappearance and spread of swine fever in the area, it is contemplated that general restrictions on the movement of swine over areas forming part of a combined district shall at once be imposed where such a course appears necessary for the prevention of the spread of the disease. It is of fundamental importance that restrictions of such a character, though not necessarily applied to areas so limited as those of single counties, should be maintained throughout the country for some considerable period. The Order has already been applied to a considerable number of areas of varying extent."

In January, 1906, another circular letter (A 135/C) was sent out to local authorities, stating that "The time has now arrived when it is desirable that the policy of grouping together the districts of local authorities for the purposes of restrictions relating to the movement of swine should be further developed," and that "the [then] present hopeful position has largely been brought about by the continued enforcement of the general restrictions upon the movement of swine imposed by the operation of the Swine Fever (Regulation of Movement) Order of 1903, or by similar restrictions embodied in the regulations made by local authorities"; further stating that "they [the Board] propose to extend considerably the application of the Swine Fever (Regulation of Movement) Order of 1903 to groups of counties in the near future," "the effect of which is to permit the free movement of swine throughout the entire area, whilst prescribing in the case of movement of swine into any part of the area the adoption of certain precautionary measures designed to prevent the spread of swine fever."

The result of the action indicated above was to increase the number of areas scheduled under the Order from thirteen in January, 1906, to twenty-seven at the present time, November, 1907, and the counties affected from forty-four to eighty-two.

Has the policy of the Board as outlined above been successful? In the report for 1906 the Assistant Secretary describes the situation as follows:—

"In the earlier part of the year under review some further steps were taken in the direction of applying the Swine Fever (Regulation of Movement) Order of 1903 to groups of counties so as to permit of greater freedom in the movement of swine between districts in which it appeared that the position as regards disease would allow of this being done with safety, whilst maintaining in force throughout the combined area the precautionary measures necessary to guard against a general epidemic of swine fever. It soon became apparent, however, that this policy could not at the moment be proceeded with without running the risk of losing the ground that had already been gained, and in some instances the freedom of movement already accorded had temporarily to be curtailed. During the latter portion of the year the development of the Board's policy in this matter was perforce suspended until such time as will allow of a full appreciation of the position entailed by the increase in the number of outbreaks of swine fever which unfortunately continues. It has been possible, however, to effect some adjustments in the groups of counties to which the Order above-mentioned has already been applied, and also to take some further steps in the direction of securing uniformity in the requirements of movement regulations by applying the Order to individual counties with, in some cases, special provisions as regards the movement of swine within the whole, or over certain portions of the county. The substitution of such an Order for the regulations made by the various local authorities is attended with benefit to persons concerned in the movement of swine, who can thus more readily master the purport of the necessary restrictions, and it is probable that the application of such Orders could with advantage be extended."

A glance at the above table shows what has happened in some of the areas scheduled under the Order, also giving the date when the Order was put into force:—

The above counties were taken for the following reasons: Glamorgan, Isle of Wight, and Monmouthshire because they were the first three to be scheduled under the Order; Derby and Notts and Yorks (East and West Ridings) because they markedly influence the pig trade of Sheffield, and probably the existence of swine fever there; Wilts and Hants because they had been under the Order, the former recently, the latter a considerable time, and both had large numbers of outbreaks in 1906; Cheshire because it has not been under the Order at all, and simply for comparison, as showing what a local authority can do to control the outbreaks of swine fever by means of its own local regulations, which I understand have been in force since July, 1901.

From the above figures it will be seen that whilst the disease has practically been kept under control in Cheshire, the figures being thirty-one outbreaks for 1903 and the same number for forty-five weeks in 1907, the corresponding figures for the other areas almost invariably show an increase, the total outbreaks for 1903 being 386, whilst those for forty-five weeks of 1907 are no less than 585; or, taking the whole country, the total outbreaks for forty-five weeks in 1903 were 1,298, as compared with 2,139 for the same period in 1907. Judging by the above figures one is forced to the conclusion that the policy of the Board of Agriculture in dealing with the disease of swine fever has not been successful.

REFERENCES.

[1] [2] [4] [6] "Annual Report of Proceedings of Board of Agriculture for 1906."
[3] Report for 1905.
[5] Reports for 1903, 1904, and 1906.
[7] [10] Report for 1902.
[8] [9] Report for 1903.

Area	Date of Order	Swine Fever Outbreaks 1903	1904	1905	1906	Forty-five weeks in 1907	
Glamorgan	September 14, 1903	0	0	28	25	43	
Isle of Wight	" 15, 1903	0	0	1	17	46	
Monmouth	" 14, 1903	0	0	4	13	21	
Derby and Notts	January 1, 1906	33	21	23	11	25	total 79
		25	25	3	3	54	
Yorks, E.R.	March 15, 1906	101	44	27	121	*23	" 187
Yorks, W.R.		191	96	72	100	164	
Wilts	January 1, 1907	11	24	31	55	106	
Hants	October 1, 1904	25	13	22	63	103	
Cheshire	Not under the Order	31	21	28	38	31	

* Parts of Yorks, E.R., were under the Swine Fever (Infected Area) Order of 1902, from April 2, 1903, to November 3, 1096, which probably accounts for the decrease in the number of outbreaks in 1907.

Royal College of Veterinary Surgeons.

EXAMINATIONS IN LIVERPOOL.

At the examinations held in Liverpool the following gentlemen passed their Final Examination:—

Mr. W. D. Allen
C. S. Elphick
G. T. Henderson
Mr. R. L. C. Forrest
J. Lyle
R. H. Oddy *

The following passed their Third Examination:

Mr. D. R. Hoddinott
Mr. J. Holroyd *

The following passed their Second Examination:

Mr. S. R. L. Beaumont
J. A. Cunningham
E. Morgan
Mr. J. Railton
W. R. O. Williams

Marked thus * passed with 2nd Class Honours.

CHARLES BLACKHURST, M.R.C.V.S.
Local Secretary.

UNQUALIFIED PRACTITIONERS.*

Dr. LANGLEY BROWNE moved:—

"That this Council, deeming it to be contrary to the public interest that any person other than duly qualified practitioners in medicine and surgery should practise medicine in Great Britain and Ireland, appoint a committee to draft such amendments of the Medical Act as may be necessary to secure this prohibition and to report to the Council at the session in May."

He held that the Council should have power to take action in the case of anyone pretending to be a medical practitioner. Every other country in Europe had a law by which unqualified practising was prevented and most of our colonies had taken similar powers. Surely the time had come when such action by the Council was necessary. The mischief done by unqualified prescribers and others in this country was very great, and although it might be said that amendments of existing Acts would be in the intesest of the medical profession, still such amendments would also be in the interests of the public.

Dr. MCMANUS seconded the motion. There was a strong feeling, he said, among the general body of practitioners in the country, while they recognised the splendid work done by the Council with regard to elevating the status of the profession, that they had been ignored by the Council. He came from a district where qualified practitioners were gradually being crushed out of existence by bone-setters, prescribing chemists, and other people of that description. If the members of the profession dared to advertise themselves or break one of the unwritten laws of medical ethics they would be brought before the Council and probably struck off the Register. At the same time those other people could practise with impunity and the Council had not the power to prevent them doing so. The idea of many practitioners was this: "God is in Heaven, the General Medical Council is sitting, all is well with the profession." That was a fallacy—a greater fallacy could not possibly exist, and many members of the profession felt that if the Council would only appoint a committee to go into these grievances a most deplorable state of affairs would be found to exist. Considering that qualified practitioners were hedged in with so many restrictions they ought to obtain some protection.

Dr. LATIMER appealed to the Council to give this important question its careful consideration. The colonies had strong enactments against these practices, and it behoved the Council to consider whether some amendment of the Medical Act could not be devised to prohibit these practices.

Dr. NORMAN MOORE said that the people would have to be educated on this matter before the Council took the step proposed in the motion. Not only among the poor but also among the most highly educated and the wealthiest classes did these practices go on. He even feared that in those two exalted bodies which made the laws of the realm—the House of Lords and the House of Commons—there was a very large proportion of persons who sought that kind of assistance when they were ill. Although most members of the Council would be in favour of the discouragement, and if possible the suppression, of that kind of practice, the Council should proceed with extreme caution in the matter.

Sir CHRISTOPHER NIXON said he did not think that the Council would ever succeed in preventing pharmaceutical chemists from giving advice to persons who asked about their cough or their toothache. He thought, however, the Council would only be doing its duty in acceding to the motion in order to protect the men on its Register. Although it might be difficult to get the Legislature to pass a broad and comprehensive measure they might get in the thin end of the wedge and afford some protection to the qualified men on the Council's Register.

Dr. LITTLE said that he could not see any prospect of any legislation passing on the subject. All the various bodies that would be affected by it would join their wealth and power in opposition to it.

The PRESIDENT said that he was by no means sanguine that they would be successful if they proceeded to draft a new Medical Act. It would be useful and valuable, however, to have a collection of all the statutes that existed in the British Empire and in foreign countries for the prevention of practice by persons not legally qualified. On that some future action might be based.

After some other members of the Council had spoken and made suggestions for the alteration of the motion, Dr. Langley Browne agreed to withdraw his original motion and to substitute the following:—

"That a Committee be appointed to report upon all the legal provisions existing in the colonies and dependencies of the Empire and in foreign countries for the prevention of medical practice by other than legally qualified persons, and to consider what steps should be taken to procure effective legislation for the same purpose in Great Britain and Ireland."

This was agreed to unanimously, and a Committee to report in terms of the motion was then appointed.—*The Lancet.*

* At the sittings of the eighty-sixth session of the General Council of Medical Education and Registration on Tuesday, Nov. 26, at the offices of the Council, 299 Oxford Street, London, Dr. Donald MacAlister, the President, being in the chair.

PLAGUE AND THE "TARABAGAN" DISEASE IN MONGOLIA.

It has long been known that a species of marmot, the *tarabagan*, found in large numbers in certain parts of Mongolia, is liable to a form of epizoötic which is highly infectious, and fatal to man. The disease resembles in many respects bubonic plague, and several Russian writers have concluded that the two diseases are identical. So far as we are aware, however, no positive proof has yet been published of their identity, and particularly bacteriological evidence of the nature of the epizootic seems to be lacking. A melancholy interest attaches to a paper on this subject published in the Russian medical journal, *The Vratch* (1907, No. 9), and written by the late Dr. M. T. Scheiber who himself recently died from plague contracted in the Government laboratory situated on a fortified island near St. Petersburg. Dr. Schreiber was sent by the Russian Government, at the end of 1905 and beginning of 1906, on a scientific expedition to the infected region. He really made two expeditions, separated by a short interval; the second alone occupied two and a half months and covered 1,600 versts (about 1,000 miles) of ground. Unfortunately, on neither occasion was he able himself to observe cases of the disease either in man or animal, apparently owing to the fact that this disease breaks out only in the autumn and disappears for the rest of the year. From information derived on the spot, however, the details of a considerable number of outbreaks, in man or in the *tarabagan*, or in both, were collected and are set forth in the article in question. These outbreaks resemble in every respect those already reported by other observers; and the details, while interesting in themselves, do not, unfortunately, help to throw further light on the main problem—the true relation of this disease to plague in man. The article con-

cludes with a brief summary of the points which seem to militate for or against their identity; among the latter are noted (1) the undoubted occurrence of these epizoötics without human beings becoming infected; (2) the fact that field mice, which are known to be susceptible to plague, do not contract this disease from the *tarabagans*, though they have every chance of doing so; and (3) the fact that domestic animals also escape it. Dogs, in particular, it is noted, eat greedily and frequently of the flesh of the dead marmots yet never develop the disease. The final solution of this problem can only come from a thorough bacteriological investigation of the disease as manifested in man and animal, and such investigation could only be rendered possible by despatching future scientific expeditions to the infected area in the autumn, since that appears to be the only time of year at which the disease prevails.—*The Lancet.*

ON PHAGOCYTOSIS.

Phagocytosis will always be associated with the name of Metchnikoff. For he it was who, some thirty years ago, demonstrated the phagocytic powers of certain leucocytes and tissue-cells, and claimed that these cells represent the sole protective mechanism of the body against invading organisms. At that time little or nothing was known of the nature of immunity or susceptibility to disease, and Metchnikoff's work was at once so brilliant and so thorough that the evidence in favour of his claim seemed overwhelming, and it was for the time being accepted almost universally as the truth. These discoveries naturally attracted much attention, and induced many other workers to enter so promising a field of research. As a result a number of facts came to light which seemed at variance with Metchnikoff's views, and the idea began to gain ground that the fluid constituents of the body, and of the blood in particular, played a part equal to, or even greater than that of the cells in the destruction of bacteria. It was found that the blood-serum of animals, especially of immunised animals, is possessed of marked bactericidal powers, and at length it came about that the purely "cellular" hypothesis was discarded by many for the purely "humoral" hypothesis, which explained phagocytosis by supposing that any bacteria taken up by cells had previously been killed by the serum. As so often happens, these two extremes of opinion were succeeded by a compromise in the form of the "cellulo-humoral" hypothesis, now commonly accepted, which attributes both to the fluid and cellular elements of the blood and tissues a share in the defensive apparatus of the body.

With the progress of time Metchnikoff, in fact rather than in name, has considerably modified his views, so that they now fall nearly into line with this "cellulo-humoral" conception. For instance, though unable to deny that the blood-serum may have a definite bactericidal action, he would explain this as due to the liberation of a ferment, "cytase," set free in the serum by the "phagolysis," or breaking-up of the leucocytes, which takes place when the blood clots outside the body. Again, "Pfeiffer's phenomenon," consisting of the agglutination and destruction of cholera vibrios introduced into the peritoneal cavity of a guinea-pig immunised against cholera, a destruction occurring without the apparent intervention of any cellular elements,' Metchnikoff regards as caused by a similar "cytase' liberated by "phagolysis" of leucocytes collected on the omentum; whereas Pfeiffer thought the vibrios were killed by bactericidal substances secreted by the peritoneal endothelium. These two instances serve to show that, although Metchnikoff still insists on the importance of the cells as originators of bactericidal substances, he no longer regards the action of these substances as limited to the confines of the cells.

It was with the object of determining the relative importance of the corpuscles and the serum of the blood as bactericidal agents that Wright and Douglas undertook their classical experiments which led to the discovery of opsonins, and eventually to the opsonic treatment of various diseases. In these experiments there were three interagents. First, blood-serum freed from leucocytes by centrifugalisation; second, leucocytes freed from serum by centrifugalisation and repeated washing in normal saline solution; third, a suspension of cocci or certain other organisms in normal saline solution. They found that after incubating a mixture of leucocytes, serum, and bacteria at 37° C. for fifteen minutes marked phagocytosis occurs. If, however, the serum is omitted from the mixture, or is heated to 60° C. for ten minutes before mixing, scarcely any phagocytosis takes place. They concluded, therefore, that serum contains certain elements which influence either the leucocytes or the bacteria in such a manner as to enable phagocytosis to occur. By further experiments they proved that these elements are destroyed by heating the serum to 60° C. for ten minutes, and that their action is on the bacteria rather than on the leucocytes. Consequently they termed these elements "opsonins" (from a Greek word meaning to prepare a meal for), because they seem to make the bacteria more palatable to the leucocytes.

These experiments would appear to prove that the leucocytes are of themselves an inert factor in the phenomena of phagocytosis, which seems to depend primarily on the action of the opsonins contained in the serum. However, there has been issued from Metchnikoff's laboratory a paper dealing critically with many points of this work. The authors bring forward evidence to prove that the phagocytic power of the blood varies widely towards different strains of the same organism, that certain organisms are ingested as readily in the absence as in the presence of opsonins, whilst others resist phagocytosis under any conditions. They believe, therefore, that only occasionally does phagocytosis depend on the presence of opsonins, which are then formed by the leucocytes; and that in the great majority of cases the cellular elements still remain the prime factor in repelling bacterial invasion.

It is evident, then, that the last word on phagocytosis still remains to be said, and that the exact significance of the process is far from clear. We can only say that the degree of phagocytosis shown towards any particular organism affords, within certain limits, a valuable index of the power of the body to resist the attacks of that organism, but we are as yet quite unable to apportion to the fluid or cellular elements of the body their exact share in the production of these powers of resistance. The questions of phagocytosis, susceptibility, and immunity, which so closely depend one on the other, are extremely difficult and obscure. They require the solution of very complex bio-chemical problems. Nevertheless this line of reseearch has led to such brilliant results in the past that we may confidently expect them to be continued in the future.—*The Hospital.*

SHEEP SCAB REGULATIONS.—"In the opinion of the National Sheep Breeders' Association, sheep scab will never be eradicated until the owner of scabby sheep is penalised after due notice of the order inflicting the penalty has been given."

[For scabby sheep insert "tuberculous cattle," and we have a solution of the most important problem now before the agriculturists of Great Britain.]—*Meat Trades' Journal.*

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaugh-tered *
GT. BRITAIN. Week ended Dec. 14		29	40			20	31			63	32	136
Corresponding week in	1906 ..	20	28			12	15			30	52	230
	1905 ..	24	39			22	38			30	22	166
	1904 ..	25	39			23	36			42	8	55
Total for 50 weeks, 1907 .. .		1041	1414			825	1858			647	2282	10920
Corresponding period in	1906 ..	891	1259			1045	1967			477	1215	6907
	1905 ..	934	1273			1168	1999			856	787	3684
	1904 ..	975	1470			1463	2562			1265	1161	5457

Board of Agriculture and Fisheries, Dec. 17. 1907.

IRELAND. Week ended Dec. 7		..	..	..	..	1	1	..	..	15	2	3
Corresponding Week in	1906 ..	..	..	..	..	..	..	..	..	7	1	72
	1905 ..	..	..	..	..	..	..	..	..	17	..	..
	1904 ..	..	..	..	..	..	..	..	..	6	..	3
Total for 49 weeks, 1907		3	5	..	..	6	11	..	..	256	146	2635
Corresponding period in	1906 ..	4	8	..	..	8	16	..	..	228	92	1055
	1905 ..	3	5	..	..	29	100	..	..	301	137	1415
	1904 ..	4	7	..	..	11	34	..	..	428	299	4105

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 12, 1907.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

AVERAGE MORTALITY AMONG HORSES.

An account of a system of co-operative horse insurance was given in this *Journal* in August last (p. 275), but no reference was made to the average mortality among the horses insured, though it seems to have been very low, only forty-two payments having been made in nine years. The number of horses insured in 1906 was 183.

In France the practice of mutual insurance both for horses and cattle is more common than in this country, and a number of estimates, based on more or less extensive records, are available of the average mortality among horses. Two estimates range from 1·50 to 2·50 per cent., and a calculation of the losses experienced in the French Remount Department in 1905 also comes to 2·50 per cent. A group of societies in Haute-Marne, on the other hand, lost only 1·75 per cent. of the horses insured, while the official Belgian statistics, 1900-1904, show in most cases an average of about 2·30 per cent. These figures are taken from an article in the *Journal d'Agriculture Pratique* (26th September, 1907), and the writer suggests that 2·50 per cent. represents an average mortality among horses one year old and upwards, on which an insurance society may safely reckon. The mortality of animals under one year old is much higher and may reach 10 per cent. and more.

Some similar calculations, based on returns from a number of farms in Germany, appear in the *Mitt. der Deutschen Land. Gesell* (9th March, 1907), from which it appears that during three years, 1903-05, the average mortality among 11,640 horses was at the rate of 3·4 per cent., and among 2,925 foals at the rate of 6·3 per cent. The bulk of the animals were farm horses. In Denmark returns from 338 societies covering 109,381 horses give a mortality of 3·6 per cent. (Report of International Veterinary Congress, Budapest, 1905, Vol. i, p. 84).—*Board of Agriculture Journal.*

LONDON COUNTY COUNCIL AND MILK SUPPLY.

The Health Committee of the London County Council are seeking to amend the Dairies, Cowsheds, and Milkshops Order, 1885. In a report upon the subject which they will present to the Council they say that they have for a long time been impressed with the necessity of amending the Order, but the subject has remained in abeyance until the report of the Royal Commission on Tuberculosis had been presented. After the issue of that report some time ago the Committee approached the Local Government Board in the matter, with the result that the Board have now expressed their willingness to consider any proposals which the Council may think fit to submit. There are three Orders giving powers to local authorities on this subject—namely, the Dairies, Cowsheds, and Milkshops Orders of 1885, 1886, and 1899 respectively. The last-named Order deals solely with tuberculosis of the udder in cows; the Order of 1886 deals mainly with penalties for offences; while the Order of 1885 is a general order under which local authorities obtain most of the powers enabling them to exercise control over the businesses of a cowkeeper, dairyman, or purveyor of milk.

The amendments proposed by the Committee are contained in the following recommendations:—

(*a*) That in the opinion of the Council the Dairies, Cowsheds, and Milkshops Order of 1885, and the regulations thereunder, should be amended in order to provide that—

(i.) The definition of the word "dairy" shall be that given in the Public Health (London) Act, 1891, with the addition that it shall also include premises where milk vessels are stored and washed, but upon which milk is not taken, premises where milk is deposited, railway companies' premises, and vehicles in which milk is conveyed : and that the Council shall be empowered to deal with the question of water supply for cows in fields and the paving and drainage of yards adjoining and belonging to cowsheds and dairies and the passageways giving access to them.

(ii.) No dairyman, as defined by the Public Health (London) Act, 1891, shall occupy any premises as a dairy till he has satisfied the Council as to the condition and suitability of the premises ; that such premises shall only be occupied as a "dairy" if and so long as they are maintained in a fit and proper condition ; that a fresh approval shall be required if the premises are vacated for a period exceeding three months ; and that one month's notice of intention to occupy premises shall be given to the Council.

(iii.) Plans, or sketch plans, of all premises proposed to be used as dairies shall be submitted to the Council.

(iv.) A fee of 10s. shall be paid to the Council on the approval of premises.

(v.) In connection with the prohibition of the sale of milk of a diseased cow, the word "disease" shall be defined as including any general or local disease liable to cause impurity of milk or to render it dangerous to health.

(vi.) The Council shall be empowered to require the provision of appliances for washing, and to require use to be made of them, so that the person of the milker may be cleansed antecedent to each milking operation ; also to require that the milker shall wear a clean overall; that the cows shall be regularly groomed and their teats and udders kept in a clean condition, and that they be cleansed before milking.

(vii.) A proper place shall be provided for storing and cleansing utensils.

(viii.) Any person who does any act causing contamination of milk shall be liable to a penalty for every such offence.

(ix.) The use for sleeping purpose of any room directly communicating with a milk store or milkshop shall be prohibited.

(x.) Dung receptacles provided at cowsheds shall comply with the provisions of the bye-laws under section 39 (1) of the Public Health (London) Act, 1891.

(xi) All cans used by retailers of milk shall be stamped with the name and address of the vendor.

(*b*) That the Local Government Board be asked to make a new Order under the provisions of section 28 of the Public Health (London) Act, 1891, to give effect to the foregoing resolution (*a*).

Diseased Meat in Newcastle.—V.S. Fined.

Before Alderman J. Beattie and Mr. J. J. Gillespie, at Newcastle Police Court, on the 13th inst., Alfred A. Stevens, veterinary surgeon, Durham, was summoned on a charge of having unlawfully deposited for sale, between November 4 and 8, three-quarters of beef, which was to his knowledge unfit for the food of man. J. A. Hutson, cowkeeper, Old Hall Farm, Sleetburn Lane, Durham, was summoned for a similar offence. The prosecution was conducted by Mr. Herbert Lee (from the Town Clerk's Office) ; and Mr. C. M. Dix represented Stevens, and Mr. J. Turnbull appeared for Hutson.

Thomas Parker, a veterinary officer under the Corporation, and Inspector of Nuisances, gave evidence. He inspected the meat at Mr. Tindall's mart, the sender having been the defendant Hutson. He found that there had been a good deal of stripping. He had never known stripping done for any other purpose than the concealment of disease. He found that there had been tuberculosis, which had even eaten into the bone in one rib. The stripping had been splendidly done ; he had never seen it so well done before. Witness condemned the whole lot, and it was afterwards seen by Dr. Armstrong, medical officer, and others. Witness afterwards saw Hutson, who told him that the cow had been ill during the night, and the veterinary surgeon, Mr. Stevens, on seeing her, said he had better have her slaughtered, and that he (Stevens) would get a butcher for him. The animal was slaughtered. Hutson added that the internal organs had been buried six feet deep. He also said that Mr. Stevens told him that he would take all responsibility and stand against anything that came. The fourth quarter, Hutson further said, was not sent to the market because the animal fell and bruised herself just before being slaughtered. It was kept and boiled for the pigs. Subsequently witness saw both the defendants, when Stevens denied that the animal had tuberculosis, and said he could not understand why the meat had been condemned. He assured witness that the lungs were quite sound, having, he said, tested them in water, and he explained that the stripping had been done because some dirt had got inside. Witness added that that was not a feasible explanation. A cloth and warm water would have been sufficient to remove the dirt. Before leaving him, witness said to Mr. Stevens "You can't pretend to know nothing about tuberculosis." Stevens replied "No, sir ; nobody knows better."

Witness, in answer to Mr. Roberts (the clerk), said it was not usual to send the internal organs of a healthy beast into the mart. But the lungs and such like of a healthy beast were not buried.

Cross-examined by Mr. Turnbull, Hutson told him that he had never seen an animal slaughtered before, and that he had had no experience of tuberculosis. He also said if he had known or suspected there was anything wrong with the meat he would never have sent it to the market.

Dr. H. E. Armstrong, medical officer of health for this city, and Dr. Harold Kerr, assistant medical officer, confirmed the evidence of the last witness as to the condition of the meat. The possibility of any one overlooking the condition of the meat was absurd.

John Brewis Tait, manager to Mr. Tindall's mart, said the meat was extensively stripped. He had never seen anything so thoroughly done in this respect. The only reason for stripping was to hide tuberculosis. It had been skilfully carried out. The case was a very bad one of tuberculosis.

William Stobbs, junior, farmer, Jubilee Terrace, Langley Moor, against whom a similar charge had been preferred and withdrawn, was also called as a witness, and gave evidence as to having killed the animal, Mr. Stevens having asked him. The beast was lying in the byre, and he noticed nothing special about it when he felled it. The defendants and witness pulled it out, and it was slung up. When a board was removed a lot of dust was raised, and went into the front of the animal, there being a sheet at the back. He saw half a dozen "marbles" or what the butchers called "clyers" on the fore quarter.

Mr. Lee remarked that "clyers" were known to butchers as tuberculosis.

Mr. Turnbull, on behalf of Hutson, contended that there was no proof that there was any knowledge on his client's part.

Mr. Roberts said he should advise the Bench that there was.

Mr. Dix, on behalf of Stevens, said that his client could not be convicted because there was no evidence to show that he deposited anything.

Mr. Roberts: There is evidence of aiding and abetting, and I shall advise the magistrates on that.

Mr. Turnbull then called the defendant Hutson, who said the animal became ill about midnight on the Monday, and it was killed and removed to the market at Newcastle on the Thursday. When it became ill he called Mr. Stevens in to see it, and he advised him to have it slaughtered. Mr. Stevens said the meat would be all right. Witness had had absolutely no experience of tuberculosis, and he had never even seen the inside of a beast before. He had no knowledge whatever of the condition of the beast. He had no idea that there was anything wrong with it. The quarter was left behind because it was the part on which the animal had received a bruise. If he had thought there was anything wrong with the beast he would have buried it. He acted on the advice of his veterinary surgeon.

Cross-examined by Mr. Lee, Hutson said he was present when the internal organs of the animal were taken out. His attention was not called to any nodules, and if he had seen any he would not have known what they were.

Mr. Dix afterwards called his client, Stevens, who said that he served his articles under the late Sir Henry Simpson at Windsor, and at present he held the appointment of veterinary surgeon to Durham Corporation. He had no interest in the present case, except that he was called in to see the animal in his professional capacity. He found it lying in the channel of the byre on its side. It was paralysed. The flesh was in very good condition. He advised that it should be slaughtere The heart and lungs were sound; in fact, he remarked at the time that he had never seen a sounder heart or set of lungs. He saw two or three nodules, but in his opinion they were not tubercles. The beast was not diseased; otherwise he would not have allowed Hutson to send it to the market at Newcatle. It was quite fit for food.

Mr. Lee: You pledge your professional reputation that all the internal organs were healthy?—I do.

Further cross-examined, defendant said he did not know of the phrase among butchers, "running the blockade," or that when the blockade was run successfully, there was a great deal of credit due to the butcher.

Mr. Turnbull and Mr. Dix thereafter addressed the Bench on behalf of their respective clients.

Alderman Beattie said the Bench were unanimously of opinion that both defendants were guilty, but they thought that there was a degree of guilt. Mr. Stevens, with his professional knowledge, was guilty, in the Bench's opinion, to a greater degree than the other man, and he would be fined £10 and costs. Hutson would be fined £5 and costs.—*The Evening Chronicle* (Newcastle).

Boracic Acid in Cream.

At the County of London Sessions, Mr. Robert Wallace, K.C., Chairman, and other justices sitting at Clerkenwell, resumed the hearing of the appeal of William Henry Cullen against a conviction by Mr. Curtis Bennett, sitting at the Westminster Police Court, on August 2, 1907, for selling to Alexander McNair, an inspector of the Westminster City Council, cream mixed with boracic acid so as to render the said article of food injurious to health.

Mr. Bousfield, K.C., Mr. Ernest Page, K.C., and Mr. George Elliott were for the appellant; Mr. McCall, K.C., and Mr. Courthope Munroe appeared for the Westminster City Council in support of the conviction.

Mr. Bousfield, for the appellant, said this was a trade created within the last 25 years, in preserved cream, not fresh cream; it was only rendered possible by the use of preservatives; and all the evidence went to show that boracic acid was the least harmful of all preservatives. What had to be decided was whether this article, which contains 21 to 22 grains of boracic acid to the pound, was injurious to the health of normal persons in normal quantities. The respondents had to show that it was injurious to health, and the evidence for the appellant was that it was not injurious to health in the quantity used. The witnesses for the respondents were in opposition to the medical profession as to boracic acid being injurious to health. Most of the cream used in London was preserved cream. If fresh cream was required it could be had by ordering. Let the authorities see that what was sold as fresh cream was fresh cream, and they would do some good.

Mr. McCall, for the respondents, said that the Sale of Food and Drugs Act of 1875 was intended to protect the community and not a particular class. Did the facts of this case bring it within the Act? He did not rely entirely on the evidence of the witnesses for the respondents. Dr. Thresh, a witness for the appellant, had admitted that boracic acid would be likely to be injurious to people suffering from kidney disorders, consumption, and indigestion, and that in some cases it was a slow poison. He also said that it should not be used by an ignorant milk dealer with no protection but a label on the jar. As to the effect of the prohibition of the use of boracic acid on the trade, Mr. McCall said that the difficulty would be overcome if there were more frequent deliveries of milk.

Mr. Wallace, in giving the decision of the Bench, said the Court, on the construction of section 3 of the Sale of Food and Drugs Act, 1875, found that that section did not apply to invalids or delicate children, but that it did apply to children. Upon the construction of the section the Court found as a fact that the boracic acid in the cream supplied in this case was not injurious to adult persons of normal health, but that it would be injurious to children. The Court also found as a fact that cream now formed part of the ordinary diet of children. The supply of cream under present circumstances must be taken to be within the section. The conviction was affirmed and the appeal dismissed with costs. Upon the construction of the section the Court expressed its willingness to state a case for the consideration of the High Court upon a point of law, subject to the finding of fact that cream now formed part of the recognised diet of children.—*The Times.*

Benevolent Account.

Dear Sir,—In 1897 I was permitted by your courtesy to make in your columns an appeal on behalf of the widow and child of a young member of the profession, who had held an appointment in Ceylon. In response to this appeal the generosity of his professional brethren provided a sum of £93 1s. 3d, which was placed at the disposal of a small Committee composed of Prof. Shave, Mr. J. A. W. Dollar, and myself, who decided that after paying a sum of £10 for furniture, the balance should be paid to the widow at the rate of £10 a year. The sum was placed at interest, which has raised it to £103 5s. This I have disbursed in quarterly instalments, and it is now exhausted.

For the satisfaction of those members who so generously subscribed, I am pleased to state that the recipient has realised the benefit and expressed her sense of obligation by use of such expressions as "No one can tell how it has helped me." The little girl is being educated in the Freemasons' Orphans School, and in acknowledging the last instalment the mother remarks, "I am glad to tell you things are looking a little brighter."

Prof. Shave has audited the accounts, and I append a statement with his certificate, which I shall feel greatly obliged if you will kindly publish for the information of the subscribers.—Yours faithfully,

Royal Vety. College, Jno Penberthy.
Camden Town, N.W., Dec. 11.

L—— Fund.

		£	s.	d.
Cr.				
Feb. 25, 1898.	To amount of subscriptions	93	1	3
Nov. 29, 1907.	Accumulated interest	10	3	9
		103	5	0
Dr.				
Nov. 11, 1897.	Paid for furniture	10	0	0
Nov. 29, 1907.	Paid to this date to Mrs. L.	93	5	0
		103	5	0

I have audited this account and seen the vouchers for payment of the several sums amounting to £103 5s. and find all correct.

Dec. 10, 1907. E. S. Shave.

Farewell Dinner to Prof. G. H. Wooldridge, F.R.C.V.S.

The students of the Royal Veterinary College of Ireland, on the evening of Thursday, Dec. 12th, gave a farewell dinner at the Dolphin Hotel, Dublin, to Prof. G. H. Wooldridge, F.R.C.V.S., on the occasion of his leaving to take up an appointment at the London Veterinary College. There was a large attendance of students. Mr. J. D. Ferguson in the chair, being ably supported by Mr. J. Doyle in the vice-chair. Along with the guest of the evening (Prof. Wooldridge) the following guests were also present: Profs. A. E. Mettam (Principal), J. J. O'Connor, J. F. Craig, G. Dunne; Messrs. J. V. Daly and W. Byrne.

Mr. F. C. Ryan proposed the toast of the evening, "Prof. Wooldridge," and referred to the popularity of their guest, as evinced by the number of students present to do him honour. On behalf the whole of the students of the College and of the football and cricket clubs, he wished to thank Prof. Wooldridge for the great interest which he had always taken in them. Thanks to his efforts things had worked very smoothly, and the football club could boast of having won 10 out of 11 matches. He also desired to identify the name of Prof. Wooldridge with the Debating Society of the College which he had initiated, and which had proved to be an unqualified success. They all felt sure that a brilliant career lay before their guest and hoped they would meet again in the good times to come, and revive some very pleasant memories.

Prof. Wooldridge, in reply, referred to the extreme regret which he experienced in saying farewell to the students of the College. He could say he had had a very happy and pleasant time in the College during the period he was connected with it. He attributed his success as a teacher not so much to his own efforts as to the *esprit de corps* and the hearty co-operation of the students themselves, without which he would have laboured in vain. Referring to the College sports, he said he would endeavour to arrange a *modus vivendi* whereby the students of the Irish and English Colleges might be brought together in friendly rivalry in the field of sports. He again desired to thank his audience for the kind manner in which they had wished him God-speed. His best wishes ever remained with the College, and he would always be pleased to hear of the success of the students, both in their professional examinations and in their professional careers afterwards.

Mr. J. Doyle proposed the toast of "The Principal and Professors of the College." He referred to the marked success of the Irish students in the professional examinations, and in securing the lion's share of the public appointments open to the profession. He also referred to the great work which had been accomplished by Prof. Mettam in the world of Tuberculosis, and drew attention to the fact that the students would reap the advantage of his work when in practice for themselves.

Prof. Mettam, in reply, said that it was not so much to himself as to the hard work of the students that the Irish College had been so successful, and when his students were successful, no one rejoiced more than he did. With reference to Prof. Wooldridge he could only echo the expressions of regret which he had heard throughout the evening; probably no one would regret the loss of Prof Wooldridge more than he would. He concluded by saying he only wished his students the success which they desired for themselves.

Mr. D. T. Mitchell proposed the toast of "The recent graduates, and the success of Prof. Dunne at the recent Fellowship Examination."—Prof. Dunne and Mr. T. D. Taylor responded suitably.

Mr. J. D. Ferguson proposed the toast of "The College Sports," and referred to the great interest which Prof. Wooldridge had always taken in the sports, and the prominent position which the football club held in the local competitions, and also the distinguished success of the students in the cricketing and golfing worlds. He desired to couple with the toast the names of Messrs. A. V. Meeke, the captain of the football club; B. L. King and J. Winckworth, the secretaries of the cricket and football clubs respectively.—Mr. Meeke suitably responded.

Mr. J. Hilliard submitted the toast of "The Chairman and Vice-Chairman," which was drunk with enthusiasm.

A musical programme followed in which the following took part: Messrs. McBirney, Doran, Mitchell, Wooldridge, Craig, Murray, Mettam, McCann, Bradford, Doyle, and O'Neill. Mr. McCann acting throughout as an able accompanist.

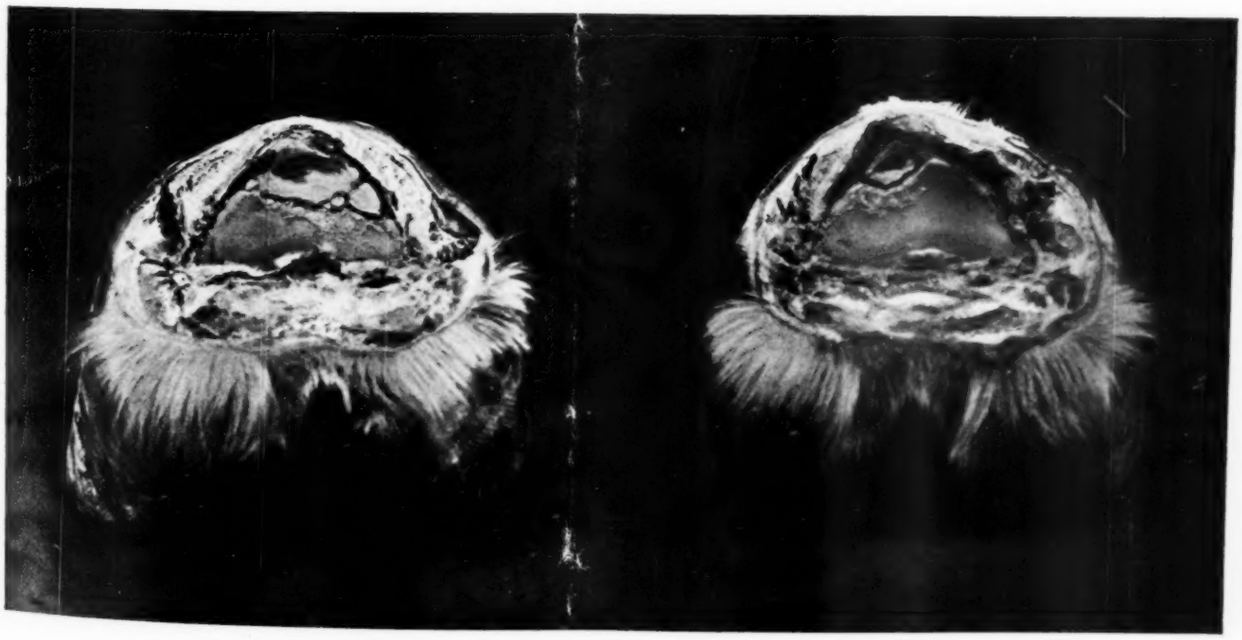
The evening concluded with the singing of "He's a jolly good fellow," and "Auld lang syne."

F. C. Ryan, *Hon. Sec.*

Racehorse Owner and Veterinary Surgeon.

In the High Court of Justice, King's Bench Division, before Mr. Justice Lawrence.—This was an action in which Mr. Coleman, a veterinary surgeon, sued Mr. Hood, a builder, owner of the racehorse Eastergate, for £21, the price of professional services rendered. It appeared that in 1904 Mr. Coleman had sent his horse Eastergate to a Mr. Riste to be trained, the arrangement being that Mr. Riste was to train and feed and find stable room for the horse in consideration of receiving one-half of any stakes the horse might win. In February, 1905, the horse's legs had gone wrong, and Mr. Coleman, a well-known Epsom veterinary surgeon had been asked by the trainer to see to it. This Mr. Coleman had done, and had found it necessary to fire the horse, afterwards taking charge of the animal and keeping it in his stable for nine weeks. The horse had subsequently won five races, and was eventually sold by Mr. Hood to Mr. Riste, the trainer, for £20, with all accounts between the two settled. It was for the attendance on the horse and his keep for nine weeks as well as medicine, etc., that Mr. Coleman was now suing. For the defence it was alleged that Eastergate had been sold to the trainer, Mr. Riste, for £20, and the settlement of all outstanding accounts. That in any case the veterinary surgeon's bill was part of the horse's training expenses,

(*Near*) CASE No. 1. (*Off*)



CASE No. 2.

DISEASE OF THE PYRAMIDAL PROCESS.

To illustrate note by Mr. W. Willis, M.R.C.V.S.

and that though it was admitted that a custom obtained on the turf by which a veterinary surgeon looked to the owner and not to the trainer for his remuneration, this was a special case, and if it was not, the custom was not such as the Court would take judicial notice of.

Mr. Justice Lawrance, in delivering judgement, said that he considered that this action ought never to have come before him. The defendant had sworn two false affidavits, first, having stated that he had never seen or heard of Mr. Coleman before the issue of the writ in this action; secondly, that he had paid his trainer, Mr. Riste, all expenses for veterinary attendance on his horse. With regard to the first of these it was proved by the correspondence that the defendant knew quite well of Mr. Coleman and his charges; and with regard to the second, the defendant was quite unable to produce any receipts for the veterinary surgeon's accounts. His Lordship gave judgment for the plaintiff, and granted the costs of the action on the High Court scale, because but for the two false affidavits judgment would have been entered for the plaintiff when applied for before the Master under Order XIV.—*The Times.*

Anthrax in the Bradford Trade.

The members of the Board charged with the investigation of anthrax met at the rooms of the Bradford Chamber of Commerce to consider their annual report. The Lord Mayor of Bradford (Mr. J. E. Fawcett) presided.

Dr. F. W. Eurich (bacteriologist to the Anthrax Investigation Board) reported that he had examined 125 samples of wool, mohair, alpaca, and camel hair, and 64 samples of dust, but in only one sample of inferior mohair were anthrax spores found.

The second report of the Board, which was adopted, stated that to enable Dr. Eurich to test a much larger number of samples of wool, hair and dust than hitherto an assistant had been appointed to help him in his bacteriological work.

The opinion that strains of anthrax spores vary considerably in their strength and vitality had been confirmed by experiments made by Dr. Eurich. More than ordinary precautions are therefore neces-ary in testing and comparing different germicidal disinfectants. Under certain conditions anthrax spores are effectually destroyed by the use of cyllin, kerol, formic-aldehyde, or Leach's (Woolcombers) fluid, while formalin gas will sterilise wool if passed through in a constant stream.

During the year Dr. Eurich has used Prof. Wright's method of testing blood for evidence of specific infection in every case but one, and from the results it appeared that this method is a reliable means of determining the occurrence of anthrax infection, and is more rapid than the method by cultivation. Still more valuable results will probably follow the extension of this method of diagnosis, and an appeal is made for immediate notice of any case of suspected anthrax to enable this method to be applied. With the co-operation and assistance of the Keighley Electrical Company, a series of experiments had been carried out to test the effects of electricity in connection with the destruction of bacilli and spores, but the conclusion arrived at was that electrolysis, simply with the aid of an acid, was not commercially possible. Further tests were being made to ascertain the assistance, if any, obtainable from the electric current in securing penetration by, and heightening the efficiency of germicides. The Board through the courtesy of the Home Office had the privilege of considering a very able and interesting report of an outbreak of anthrax which occurred in Seistan, Eastern Persia, in the year 1906. The Board recommended that if it were possible districts in which anthrax was known to exist should be prescribed and the wool or hair coming therefrom, if possible, earmarked so that special precaution could be taken with it on its being dealt with in this country.—*Yorkshire Chronicle.*

The Royal Dick College Magazine.

The November number of this lively bantling shows evidence of well maintained vitality. There are clinical and professional notes of interest, the current College news, and several items of humour, one of which we give:—

PATHOLOGY AND BACTERIOLOGY OF LIMERIKITIS.

By DAVID HANNAY, Class C.

I.—*Patholcgy.*

Definition.—A specific infectious disease of man caused by B. Cupiditas. Seldom fatal, always ruinous. Characterised by a hyperacute course of insanity, lasting until the last pawnticket.

Distribution.—General in British Isles. The organism is found in the literature (*sic*) carried by the victim, and can be isolated and cultivated on a tanner p.o.

Mode of Infection.—Direct by the optic nerve; indirect by the auditory nerve. In any case, a lesion of the brain serves as the place where infection fixes.

Immunity.—Very few are immune—is even known in north-east of Scotland. Attacks all classes, sexes, and ages. (We are pleased to announce that artificial immunity can be conferred on any victim soft enough to try the treatment just discovered in the Lab. See Bacteriology for particulars.)

Result of Recovery.—Some maintain that an attack does confer immunity—some deny it. We have found that partial temporary immunity is conferred if the attack has been sufficiently exhausting. Since the introduction of our extraction test many have escaped a second attack.

It is sometimes of a latent type—mild—but when once developed, the case is hopeless, unless our inoculation is carried out at once.

Symptoms.—At the outset, a febrile attack, appetite is lost, and sluggish. In a day or so, wild, anxious look on face. After publishing day, a hopeless expression; soon breathing and pulse accelerated, œdematous swellings on head, temperature rises and falls at intervals. Mental depression and insomnia now appear.

Morbid Anatomy.—Characteristic lesion is softening of cranial bones, atrophy of cerebrum, heart hypertrophied, lung emphysematous, liver often cirrhotic, spleen soft.

Diagnosis.—In suspected case there is a febrile attack, absence of mind, staring into space, juggling of words, poetical expression and the wearing of the hair long.

II.—*Bacteriology.*

Causal infection—B. Cupiditas—discoverer unknown (blamed on old Ireland). Cultivated by Harmsworth, Pearson, and others in 1907.

Only man (including woman) is susceptible (though some contend that only asses and goats are susceptible. *Vide* Carlyle, Definition of Mankind). The bacillus is a large rod with four lines in it; when a fifth line is added the causal relationship is proved.

Stains with most dyes. Loses drams. Culture is dangerous to grow,—seldom grows in labs. (not in this one). Grows readily on all "rags"—yellow or any other colour. The B. is not easily killed by putrefactive organisms (else it could not exist in its favourite media.)

Immunity.—Only *passive*, which is obtained by transference of the patients' ducats to the discoverer (who may be seen any morning in the lab.)

Personal.

DAYUS.—On December 14th, at Dorrington, Salop, Frances Matilda, wife of Charles Dayus, M.R.C.V.S.

ELPHICK.—At 56 Eldon Street, Newcastle-on-Tyne, Dec. 16th, to Mr. and Mrs. Harry Elphick, a son.

Prof. JOHN PENBERTHY has accepted the position of Veterinary Inspector for the London Show of the Shire Horse Society, and the following gentlemen have been selected to assist him: Messrs. W. J. T. Bower, T. H. L. Duckworth, T. Eaton Jones, H. G. Lepper: reserve, Mr. E. A. West.

INDIAN CIVIL VETERINARY DEPARTMENT.

Extract from *London Gazette*,

INDIA OFFICE, Dec. 17, 1907.

The King has approved of the following promotions among Officers of the Indian Army Departments:—

To be Lieutenant-Colonel.

Maj. Henry Thomas Pease, M.R.C.V.S., C.I.E. Dated Sept. 3, 1907.

Transferred to the Retired List.

Lieut.-Colonel John William Akerman Morgan. Dated Aug. 17, 1907.

OBITUARY

CHARLES FREDERICK HUGH SKELTON, F.R.C.V.S., Leyton, Essex. Graduated, Lond: Jan., 1884.

Mr. Skelton died at Althorp, Leyton, on Monday, 16th inst., at the age of 47.

EDWARD J. RICHARDSON, M.R.C.V.S., Spilsby. New, Edin: Jan. 1884.

Mr. Richardson died suddenly on 8th inst.

JOHN TARVER BURDON, M.R.C.V.S., Beaulieu, Southampton. Lond: March, 1875.

Mr. Burdon died suddenly, whilst driving from Lymington to Beaulieu, on Thursday, Dec. 12th. He was 54 years of age.

CORRESPONDENCE.

THE TREATMENT OF "DROP."

Sir,

I use the word "Drop" as it is doubtful whether any other designation can be regarded as correct until we know absolutely the pathology of this disease.

Of course "Drop" is not a scientific word, also it would include post-partum paralysis, but I propose to confine its use to the disease which has been called parturient apoplexy, milk fever, etc.

Twenty years ago I used large doses of whisky, as I believe was then the custom with a good many people, *e.g.* Mr. T. Campbell, Kirendbright, at a meeting of the West of Scotland Veterinary Medical Association, held at the Veterinary College, Glasgow, on June 1st, 1887, is reported to have recommended 20 to 30 ounces of good whisky or brandy diluted with an equal quantity of cold water and one and a half ounces of sulphuric ether; in half an hour, four to six pounds of treacle dissolved in hot water. Later, in *The Journal of Comparative Pathology* of September, 1891, Mr. McConnell recommended treatment with drs. ij. to oz. j. of chloral, with one or two pounds of treacle as a first dose.

This treatment was sufficiently popular for a well known firm to bring out a proprietary medicine of the kind. Whisky and treacle made a fairly big drink, especially in the doses recommended by Mr. Campbell; chloral is known to have a paralysing effect on the pharynx, so I think we may regard it as a wonder that we did not choke the lot, when we know the difficulty there is in swallowing while in a comatose state.

We skip an interval and come to the udder treatment, as first recommended by J. Schmidt (*Veterinarian*, July, 1898) and consisted of iodine salts. This was found by many practical men to irritate the udder and cause mastitis, so arguing that if an antiseptic action was required other drugs might be used not having this action, Lysol, Chinosol, Permanganate and others were tried. Chinosol was used comparatively early and is still, I believe, employed by the majority. I have no note as to whom we are indebted for introducing the chinosol treatment, but then, although it was giving great satisfaction to many, it was argued (harking back to Herr Schmidt's original recommendation that air should be admitted) why not use oxygen? then air alone.

Someone writing in *The Veterinary Record* 25th April, 1903, claimed that he had had no failures with air alone, and Messrs. Huish brought out an instrument for the filtration of the air so used through cotton wool. I myself used chinosol until I tried and recommended peroxide of hydrogen (*Veterinary Record*, 15th October, 1904) which seemed to me to be the logical antiseptic to use if we were dealing with an anærobic organism.

Mr. Hunting, in an able paper read some time ago, advised in certain cases in horses the supra-caudal application of sodium chloride; now in Drop, air applied in a similar manner will be found of great benefit, or of quite as much as when injected into the udder, but perhaps a more convenient place would be the neck, using it, say, in the proportion of one drachm of water to a bubble of air.

I regret that even this idea is not original—it has been done before—but I know this fact, that for several years prior to the use of udder injections I had splendid results with a treatment which was entirely hypodermic, but consisting of medicine which I believe now must have done harm not good, but I did not choke my patients, and I saw that they were well nursed.

W. H. FLOOK.

Dublin.

THE ANNUAL REGISTRATION FEE.

Sir,

Mr. Begg calls me to account in your issue of the 14th inst. for a statement I made at the October meeting of the Scottish Metropolitan V.M.S. with reference to the feeling of the West of Scotland Society on the proposed Veterinary Surgeon's Act. The report of the West Society had not been published when I spoke, and I could only record the impression left on my mind by the vote, and the remarks of the majority of the speakers on the question, and my reference was to the penal clause rather than to the Act as a whole.

I regret that my statement was rather too sweeping, but I think if modified to read that the feeling of the West of Scotland Society as a body was against the penal clause it will be a fair statement of the position, and will probably remove Mr. Begg's objections.—Yours truly.

A. GOFTON.

Royal (Dick) Vet. College,
Edinburgh, Dec. 14.

COMMUNICATIONS AND PAPERS RECEIVED.—Messrs. H. C. Wilkie, Frank C. Ryan, A. Gofton, C. Dayus, C. Blackhurst. *The Newcastle Daily Journal.*

Original articles and reports should be written on one side only of the paper and authenticated by the names and addresses of the writers, not necessarily for publication.

Communications for the Editors to be addressed 20 Fulham Road, S.W.